

What is claimed is:

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502 } 1. A method for determining a state of a person,
characterized by:
- 5 automatically defining a region of interest in an
image indicative of a predetermined feature of the
person using an early vision cue; and
- automatically finding the location of the
predetermined feature in the defined region of interest
- 10 using elastic bunch graph matching.
2. A method for determining the state of a person
as defined in claim 1, characterized in that the step
of defining the region of interest includes roughly
- 15 locating the region of interest using the early vision
cue and the step of finding the location of the
predetermined feature commences at a rough location
provided by the step of defining the region of
interest.
- 20 3. A method for determining the state of a person
as defined in claim 2, characterized in that the early
vision cue includes at least one of stereovision,
motion, color, convexity, topology, or structure.

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4. A method for determining the state of a person as defined in claim 3, characterized in that stereovision is used to produce disparity histograms and silhouette images.

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5. A method for determining the state of a person as defined in claim 1, characterized in that the step of defining the region of interest includes background suppression.

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6. A method for determining the state of a person as defined in claim 1, characterized in that the predetermined feature is the person's face and the state of the person is described by nodes positions of facial elements.

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7. A method for determining a state of a person as defined in claim 1, characterized in that the image is in a sequence of images and the location of the predetermined feature is tracked in a subsequent image.

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8. A method for determining a state of a person as defined in claim 7, characterized in that an erroneous location of the predetermined feature is corrected based on a model of typical facial features.

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9. A method for determining a state of a person as defined in claim 7, characterized in that the method further comprises reinitializing the tracking of the location of the predetermined feature based on a predicted location of the predetermined feature.

10. A method for feature sensing as defined in claim 9, characterized in that the reinitializing step is preformed using bunch graph matching.

11. A method for determining a state of a person, characterized in that the method further comprises using the location of the predetermined feature for animating a graphical head model.

12. A method for determining a state of a person, characterized in that the state of the person determined by the method is the degree to which an eye is closed.

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13. Apparatus for determining a state of a person, characterized by:

- means for automatically defining a region of interest in an image indicative of a predetermined
- 5 feature of the person using an early vision cue; and
- means for automatically finding the location in an image of the predetermined feature in the defined region of interest using elastic bunch graph matching.